



UNITED STATES PATENT AND TRADEMARK OFFICE

AS
UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/935,668	08/24/2001	Yasushige Nakamura	011071	1050

23850 7590 03/06/2002

ARMSTRONG, WESTERMAN & HATTORI, LLP
1725 K STREET, NW.
SUITE 1000
WASHINGTON, DC 20006

EXAMINER

NOTE, JANIS L

ART UNIT	PAPER NUMBER
----------	--------------

1753

DATE MAILED: 03/06/2002

4

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/935,668

Applicant(s)

NAKAMURA *et al.*

Examiner

J. DOTE

Group Art Unit

1753

— The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- ☒ Responsive to communication(s) filed on 8/24/01
- ☐ This action is FINAL.
- ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-14 is/are pending in the application.
- Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1, 3-14 is/are rejected.
- ☒ Claim(s) 2 is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement

Application Papers

- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner
- ☒ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
- ☒ All ☐ Some* ☐ None of the:
 - ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____

Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 2 ☐ Interview Summary, PTO-413
- ☒ Notice of Reference(s) Cited, PTO-892 ☐ Notice of Informal Patent Application, PTO-152
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948 ☐ Other _____

Office Action Summary

1. The disclosure is objected to because of the following informalities:

(1) The use of trademarks, e.g., Radiolite [sic: RADIOLITE] at page 22, line 6, has been noted in this application. The trademarks should be capitalized wherever they appear and be accompanied by the generic terminology. This example is not exhaustive. Applicant's should review the entire specification for compliance.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

(2) According to Table 4 at page 35, the toners in comparative examples 7 and 8, and examples 19 through 21 all appear to have the same composition. However, the toners in those examples do not provide the same results.

Appropriate correction is required.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 5 and 7-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5 is indefinite in the phrase "the binder resin contains at least a polyester resin originating from an alkylene oxide adduct of bisphenol A" (emphasis added) because it is not clear whether the polyester resin recited in claim 5 refers to either the first or second non-linear polyester resins recited in claim 1 or to another polyester resin.

Claim 7-10 are indefinite in the phrase "[a] method of forming a color image on a recording medium by means of an electrophotographic system" (emphasis added) because it is not clear what is the scope of the phrase "means of." It is not clear whether the claims require an electrophotographic system as disclosed in the specification or equivalents thereof, or merely some features of an electrophotographic system.

Claims 11-14 are indefinite in the phrase "[a]n apparatus for forming a color image on a recording medium by means of an electrophotographic system" (emphasis added) because it is not clear what is the scope of the phrase "means of." It is not clear whether the claims require an electrophotographic system as disclosed in the specification or equivalents thereof, or merely some features of an electrophotographic system.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and

potential 35 U.S.C. 102(e), (f), or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1, 3/1, 5/1, and 6/1 are rejected under 35 U.S.C. 102(b) as being anticipated by US 4,863,824 (Uchida), as evidenced by US 5,432,035 (Katagiri'035).

Uchida discloses a color toner that meets the compositional limitations recited in the instant claims. The toner comprises the colorant carbon black and a binder resin. The binder resin comprises a first non-linear polyester resin having a softening point Tsp of 130°C and contains 6.2 wt% of chloroform insolubles and a second non-linear polyester having a Tsp of 95°C. The first polyester resin and second polyester resin are present in a weight ratio of 70:30 of the first to second resin. Both first and second polyester resins are obtained by reacting an alkylene oxide adduct of bisphenol A that is within the limitation of formula (I) in instant claim 5. See toner 2 in Table 3, resins 1-2d and 1-2b in Tables 1 and 2. Uchida further discloses that the color toner described above can be used in an electrophotographic imaging process to form a toned image. Col. 1, lines 5-18.

Uchida does not identify carbon black as an infrared absorber. However, it is well-known in the art that carbon black is an infrared absorber. Katagiri'035 discloses that black

pigments such as carbon black "have a high infrared light absorption capability." Katagiri'035, col. 8, lines 39-41. The instant claims do not exclude the colorant and infrared absorber from being the same component.

Uchida does not disclose that his color toner is used in an imaging process employing a photofixing system. However, the recitation "used in an imaging process employing a photofixing system" is based on intended use and does not distinguish the instant claimed color toner from the toner taught by Uchida.

8. Claims 1, 3/1, 4/3/1, 5/1, and 6/1 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,232,028 B1 (Kushino'029) combined with Uchida.

Kushino'029 discloses a flash fixing electrophotographic color toner made in a particular method. The toner comprises a colorant, an infrared absorber, and a binder resin.

Kushino'029's method comprises the steps of blending a master batch comprising the infrared absorber with the other toner components to form a toner composition, melting and kneading the toner composition, and then pulverizing the kneaded composition to form toner particles. See, for example, example 1 at cols. 15 and 16. The infrared absorber has a maximum absorption wavelength preferably in the range of 750 to 1100 nm, more preferably in the range of 800 to 1100 nm. Col. 3, lines 38-40.

The infrared absorber can be a phthalocyanine compound. Col. 4, line 28, to col. 7, line 59. Kushino'029 discloses that said toner can be used in an electrophotographic printing process. Col. 1, lines 14-15, and col. 19, lines 42-48. Kushino'029 discloses that a xenon flash lamp is used for fixing the flash finishing electrophotographic toner. The xenon flash lamp is preferably operated with "an electric input energy per unit" in the range of 1.6 to 3 J/cm². Col. 15, lines 29-33.

Kushino'029 discloses that his toner "has a high capacity for absorption of infrared ray, exhibiting a highly satisfactory flash fixing property, and providing economically advantageous." Col. 2, lines 35-38. Kushino'029's toner provides toner images without fog and voids. See Table 1 at col. 20.

Kushino'029 does not disclose that the toner binder resin comprises a polyester resin as recited in the instant claims. However, Kushino'029 discloses that the binder resin "does not need to impose any particular restriction," and that the resin can be a polyester resin. Col. 13, lines 8-9, 12, and 15. Uchida discloses a toner polyester resin that meets the compositional limitations recited in the instant claims. The discussion of Uchida's polyester resin in paragraph 7, supra, is incorporated herein by reference. Uchida discloses toners comprising said polyester resin used in a roller-fixing method, not a flash-fixing method. However, Uchida discloses that said

polyester resin provides toners having sufficiently good grindability to enable the employment of standard grinding techniques to produce a toner, and high resistance to blocking. Uchida, col. 2, lines 42-45. Uchida shows that toners comprising his polyester resin do not form clumps when stored for two hours at 55°C and a relative humidity of 26%. Col. 12, lines 3-9. Toner particles having a desired particle size obtained by standard grinding techniques and having good storage stability would also be desirable for flash fixing toners.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Uchida, to use Uchida's polyester resin as the toner binder resin in the toner disclosed by Kushino'029, because that person would have had a reasonable expectation of successfully obtaining a flash-fixing electrophotographic toner having a desired particle size obtained by standard grinding techniques and good storage stability.

9. Claims 7, 9/7, 10/9/7, 11, 13/11, and 14/13/11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kushino'029 combined with Uchida as applied to claims 1, 3/1, 4/3/1, 5/1, and 6/1, above, further combined with Diamond, Handbook of Imaging Materials, pp. 160-163.

Kushino'029 combined with Uchida renders obvious a flash-fixing electrophotographic toner as described in paragraph 8 above, which is incorporated herein by reference.

As discussed in paragraph 8, supra, Kushino'029 discloses that the flash fixing toner can be used in an electrophotographic printing process, and that toner fixing is accomplished with a xenon flash lamp having an "electric input energy per area" in the range of 1.6 to 3 J/cm², which is within the range of 1.0 to 6.0 J/cm² recited in instant claims 7 and 11. Kushino'029 discloses that the flash fixing toner can be used in copying devices of the Carlson system. Col. 15, line 41.

Kushino'029 does not explicitly recite the imaging forming steps recited in instant claim 7. Nor does Kushino'029 explicitly recite the components in the copying apparatus recited in instant claim 11. However, the image forming steps in an electrophotographic method and the components in an electrophotographic copying apparatus are well-known in the art. Diamond discloses that an electrophotographic image copier comprises (1) a photoreceptor, (2) a charging device that charges the photoreceptor, (2) an image exposure system that irradiates the charged photoreceptor to form a latent electrostatic image, (3) a developing device that develops the latent image with a toner to form a visible toner image on the photoreceptor, (4) a transfer device to transfer the toner image from the

photoreceptor to paper, (5) a fusing (i.e., fixing) device that fuses (fixes) the toner image to the paper by exposing the toner image to radiant heat from a lamp, or by contact with a heater roller, etc. Diamond, pages 160-163, and Figs. 4.1 and 4.2.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Kushino'029 and Diamond, to use the flash fixing electrophotographic toner rendered obvious by the combined teachings of Kushino'029 and Uchida in the electrophotographic imaging process and apparatus comprising the steps and components recited in instant claims 7 and 11, because that person would have had a reasonable expectation of successfully obtaining an electrophotographic imaging process and copying apparatus that provide color toner images without fog and voids as taught by Kushino'029.

10. Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 8 and 12 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The prior art does not teach or suggest a binder resin comprising a first and second polyester resin having the Tsp's, chloroform insoluble content, and acid number values recited in those claims.


11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (703) 308-3625. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Nam Nguyen, can be reached on (703) 308-3322. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9311 (Rightfax) for after final faxes, and (703) 872-9310 for other official faxes.

Any inquiry of papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Alva Catlett, whose telephone number is (703) 308-1100.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

JLD
March 4, 2002


JANIS L. DOTE
PRIMARY EXAMINER
GROUP 1500
1700